



Source Water Assessment Program (SWAP) Report For Monterey Water Company

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? Inventory land uses within the recharge areas of all public water supply sources;
- ? Assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

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Table 1: Public Water System (PWS) Information

<i>PWS NAME</i>	Monterey Water Company
<i>PWS Address</i>	P.O. Box 17, Sandisfield Road
<i>City/Town</i>	Monterey, Massachusetts
<i>PWS ID Number</i>	1193000
<i>Local Contact</i>	Ken Heath, President
<i>Phone Number</i>	413-528-0722

<i>Well Name</i>	<i>Source ID#</i>	<i>Zone I (in feet)</i>	<i>IWPA (in feet)</i>	<i>Source Susceptibility</i>
Well #1	1193000-01G	274	720	Moderate

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The Monterey Water Company serves 58 homes and small businesses in the rural community of Monterey. The community is served by on-site septic disposal systems. Well #1 is a 364-foot deep rock well. An informal pump test in 1994 established an estimated yield for the source of 10-gallons per minute; the pump is set at a depth of approximately 145 feet. The Zone I and Interim Wellhead Protection Area (IWPA) radii are 274 feet and 720 feet, respectively, based on that estimated yield. The Zone I is the protected area immediately surrounding the wellhead while the IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

The bedrock near this well is a fairly complex series of folds and faults, involving laminated gneissic metasandstone, metagraywacke, interbedded schists and predominantly carbonate rocks of the Stockbridge formation: quartzose, dolomite, and marble. Although there is no mapping of the overburden material, it is assumed to be till based on topography. There is no information regarding a confining, protective clay layer in the vicinity of the well. Wells located in these geological conditions are considered to have a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration from the surface. The water from the well serving the facility has chlorine added as a disinfectant. For current information on water quality monitoring results, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Please refer to the attached map of the Zone I and IWPA and Table 1 for additional information regarding the location of the well and activities within the protection areas.

2. Discussion of Land Uses in the Protection Areas

There are few activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Nonconforming use in Zone I;**
2. **Low density housing with septic systems; and**
3. **Electrical Transformers.**

The overall ranking of susceptibility to contamination for the well is moderate, based on the presence of few threatening land uses or activities in the Zone I and IWPA, as seen in Table 2.

1. Nonconforming use in Zone I - The Zone I for Well #1 is nonconforming with respect to DEP land use restrictions, that allow only water supply related activities in the Zone I. The public water supplier does not own and/or control all land encompassed by the Zone I of the well. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

Recommendations:

- ✓ Do not conduct any additional activities within the Zone I. Contact MA DEP prior to conducting any activities within Zone I.
- ✓ Continue to keep a current emergency response plan for responding to an accidental release.

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Roadways	Yes	Yes	Moderate	Prohibit parking along road, monitor activities
Low density housing	Yes	Yes	Moderate	Refer to septic system brochure attached
Electrical Transformers	Yes	Yes	Moderate	Request information regarding PCB in MODF change from your electric company

* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

2. Low Density Housing -- The Zone I contains Sandisfield Road and one residence with associated parking and septic systems. The IWPA contains two additional homes. The most significant threats from a septic system are from lack of maintenance and improper disposal of non-sanitary waste. Another potential threat from residential users is mismanagement of household waste.

Recommendations:

- ✓ Provide residents with information about proper maintenance and disposal practices for septic systems. Septic system components should be located, inspected, and maintained on a regular basis. Refer to the attachments for more information regarding septic systems.
- ✓ Avoid septic tank cleaners, especially those with acids and solvents.
- ✓ Monitor roadside for spills and leaks.
- ✓ Encourage residents to utilize local household hazardous waste collection days.
- ✓ Supply residents with information about BMPs for household hazardous waste management and lawn care.

3. Electrical Transformer – Electrical transformers contain Mineral Oil Dielectric Fluids (MODF). Although the use of PCBs is banned in new transformers, historically, PCBs were used in some transformers.

Recommendations:

- ✓ Contact the local utility to determine if the transformers contain PCBs. If PCBs are present, urge the immediate replacement of oil.
- ✓ Keep the area near the transformers free of tree limbs that could endanger the transformer in a storm.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. Monterey Water Company should review and adopt the key recommendations above and the following:

Priority Recommendations:

- ✓ Consider well relocation of Well #1 if Zone I threats cannot be mitigated.

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Continue to prohibit public access to the well and pumphouse by maintaining locked facilities.
- ✓ Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism; check any above ground tanks for leaks, etc.
- ✓ If it is not feasible to purchase privately owned land within the Zone I at this time, consider a conservation restriction that would prohibit potentially threatening activities or a right of first refusal to purchase the property.
- ✓ Redirect road and parking lot drainage in the Zone I away from well.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.

Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers and certified operator. Post labels as appropriate on raw materials and hazardous waste.

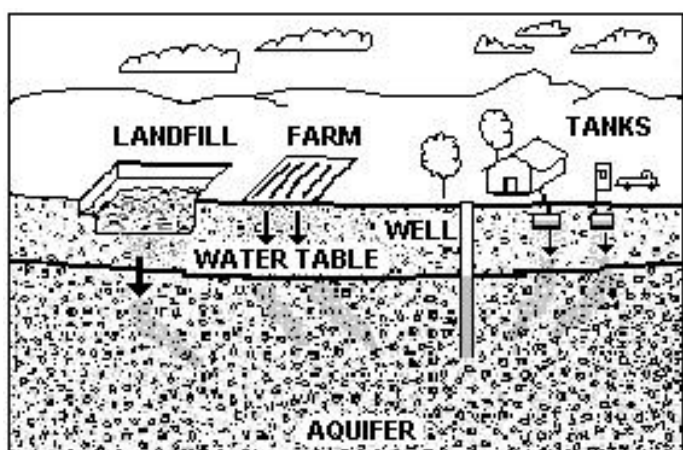


Figure 1: Example of how a well could become contaminated by different land uses and activities.

For More Information:

Contact Catherine V. Skiba of the Western Regional Office at 413-755-2119 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:

www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws/, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been made available to the public water supplier, town boards, and the local media.

- V Work with your community to ensure that stormwater runoff is directed away from the well along the roadway.

Facilities Management:

- V Do not store or use hazardous materials within Zone I.
- V Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.
- V For utility transformers that may contain PCBs, contact the utility to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.

Planning:

- V Work with local officials in Monterey to develop and include the Monterey Water Company IWPA in Aquifer Protection District Bylaws, and to assist you in improving protection.
- V Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- V Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.
- V Consider obtaining a conservation restriction or "Right of First Refusal" for any land within Zone I that cannot be purchased.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note: each program year the Department posts a new Request for Response application package for the Grant program (RFR). On or about May 1 the new RFR is available and the application is due back on or about June 31. Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at <http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Fact Sheet
- Your Septic System Brochure
- Pesticide Use Fact Sheet
- Wellhead Protection Grant Program Fact Sheet